

# Towards common energy standards for buildings across Europe

by Andrew Warren, Director, UK Association for the Conservation of Energy (ACE)

***The world of the speculative builder of commercial premises - offices, shops, hotels, or hospitals - is about to change dramatically. Before planning permission is granted anywhere in Europe for any building larger than 1000 square metres, the builder will be required to investigate installing an energy supply system based on renewable energy.***

***This is one of the key requirements included in a new draft directive, called 'Energy Performance of Buildings', due for approval by all the European institutions by June this year. As the European Commission only published the original details last May, there is no question that this is one energy initiative which has definitely been fast-tracked. Perhaps it is because this is their first initiative in a long while which directly addresses the single biggest sector of energy usage: buildings. Running 160 million of these causes over 40% of Europe's energy consumption.***

***And it won't be just a case of a perfunctory token investigation, before returning to business as usual. The onus will be very much on the builder to demonstrate why he or she isn't taking up the renewable option. Because before he tries to head off down any conventional fuel route, he will have to place on the public record his entire technical, environmental and economic feasibility study. It will then be up to any "stakeholder" to challenge receipt of planning permission which is insufficiently environmentally friendly – reports Andrew Warren.***

**T**here are lots of opportunities to switch the electricity supply system into a new building, so that it is based on more decentralised energy, often incorporating cogeneration, district heating or heat pumps, all replacing conventional fossil fuel generated electricity.

Changes are also promised in the directive, which will improve Europe's existing buildings. If you are moving into a different building, whether for work or to live in, you will now automatically receive information on how energy efficient it is – and guidance on how that can be improved. Implementing this will require a considerable expansion in the number of trained energy assessors. This prospect has so alarmed some European governments that they are arguing that a right to defer implementation of this part of the directive be delayed until 2008, to allow sufficient training time.

Fortunately that should not be a problem for the UK. Brian Scannel of the relevant trade association FAERO, the Federation of Authorised Energy Ratings Organisations, says: "We are absolutely confident that our members will be in a position to meet this welcome extra demand for their services in a thoroughly competent and efficient way." All they ask is

agreement within the next twelve months as to the exact criteria to be employed for measuring business buildings' energy performance. There are no such problems for the residential sector, where the Standard Assessment Procedure (SAP) has long been common currency.

Both the Parliament and the Commission are very alarmed at the prospect of such delays, and this is likely to be a much-contested point in the detailed negotiations, which the Spanish presidency will oversee over the next few months. After all, as Alejo Vidal-Quadras MEP, the Spanish rapporteur, points out: "This directive is supposed to deliver 45 million tonnes of carbon dioxide savings, during the first Kyoto Treaty time period. That starts concluding from 2008. If large parts of the directive don't begin operating until then, it greatly reduces its usefulness for the European Climate Change programme."

But there are other parts of the directive which will have to be part of all national laws within two years. For instance, if as an occupant you are substantially upgrading a commercial building bigger than 1000 square metres, you will need to ensure you are following contemporary energy

saving criteria. Regular inspections will be required to check efficiency of boilers or air-conditioning units. Public buildings will display prominently details of relative energy performance.

## **BUILDINGS ARE EXPANDING**

And buildings are expanding in size. Between 1985 and 1997, the average size of a European home increased from 83 to 87 square metres. Whilst the residential sector is responsible for two-thirds of energy consumption in buildings, the commercial sector is expanding even more rapidly, as service industries grow in importance across Europe. In Britain energy demand in this sector is leaping by 3.7% each year – proportionately, much faster than the growth of energy consumption in transport. There is a net increase in the building stock of 1.5% every year.

How is all this fuel used? In both sectors, heating fuel is the most important end usage (57% in homes, 52% in commercial buildings). Water heating is next most important (25% in homes, just 9% in commerce). Appliances are responsible for 16% of commercial energy usage, 11% of domestic – but upgrading of energy

standards for such appliances are deliberately not addressed in this directive.

How much of this fuel can be saved? According to Energy Commissioner Loyola de Palacio - herself also a Spaniard - "a savings potential of around 22% of present consumption can be realised by 2010." Savings potential is defined in terms of investments in energy efficient technologies which offer a payback period of eight years or less, thus "allowing a high rate of return compared to alternative investments, including in energy production." Given that the lifetime of a building can be a century or more, such "payback" criteria can even be argued to be rather conservative.

Bearing in mind this substantial potential to save energy in existing buildings, how far does the new directive go in ensuring it is realised? Some would argue the directive is overly modest. Nowhere is there any requirement that the recommendations from the energy survey - the certification, in Eurospeak - be implemented.

But then nor was there in the UK government's similar scheme, which tells English and Welsh housebuyers about the energy characteristics of their new home. This had been one of the key features within the "sellers' pack" concept, which was a key feature of the Government's Homes Bill. The Bill itself was a casualty of the election. Although it had passed through all its House of Commons stages well before polling day, it got seriously bogged down in the House of Lords, and was one of several Bills which the Government business managers eventually abandoned.

It has not yet been resurrected in the new Parliament. But now there may be no need for it to take up Parliamentary time: current official thinking is that the directive can become law automatically under the terms of the European Communities Act of 1972, abetted by a few judicious statutory instruments.

### **Will anyone act?**

So, the energy saving advice is given. But will anyone act upon it? Getting advice implemented tends to work best when it has a grant scheme

attached. Most homes in Britain now have some insulation in the loft (although few have more than one-quarter of the recommended thickness installed). In most cases, this insulation was paid for via a grant meeting 67% of the total cost. Since the general grant was abandoned in 1987, the number of people paying to install loft insulation has dropped away.

Small grants have more recently been on offer for brief periods from the Energy Saving Trust, to assist with items like high efficiency gas boilers or cavity wall insulation. Whenever the grants have been around, installation levels have increased dramatically, only to decline when the grant scheme is terminated.

Certainly there are strong hints in the directive about the need for judicious tax incentive or grant schemes to encourage improvements. But no more than that. Perhaps the new Energy Efficiency Commitment, which comes into effect next month, can step into the breach. Under it, all gas and electricity companies will have to deliver agreed levels of kilowatt hour savings, at least in the residential sector. Past experience suggests that "cashback" equivalents will be among the more effective carrots they can offer.

Nor will every country have to carry out the "certification" in an identical way. Several have existing measurement schemes - the Standard Assessment Procedure (SAP) scheme marking between 1 and 100, familiar to all new homebuyers in the UK, is not unique, but nor is it identical to schemes operating on the Continent. The requirement is only that certain key characteristics are included in the measurement procedure. In the short term, that is sensible, although inevitably pressure will build for a common measuring scheme across Europe.

Only the most perverse Europhobe could portray this initiative as being the slightest bit "dirigiste" (if only!). Commissioner de Palacio has had to tread a very delicate line regarding subsidiarity. On the face of it, as by definition buildings do not cross national frontiers, what precise

energy standards they meet are nothing to do with Brussels. On the other hand, buildings are the biggest users of energy bar none - 40% of Europe's carbon dioxide emissions come from buildings, just 31% from transport. And the EU most certainly does have responsibilities to reduce greenhouse gases to meet international commitments. All of which makes the directive a priority, whilst at the same time restricting the amount of detailed change it can mandate.

Last December the Council of Ministers from the 15 member States, and this February the European Parliament, endorsed what is essentially an "enabling" directive. Despite some initial knee-jerk rumblings concerning "whether buildings cross frontiers", in the end both institutions are responding positively. After all, even if buildings themselves don't cross national frontiers, the emissions caused by the fuel burnt in them most certainly do.

Both Parliament and Council have repeatedly urged the European Commission to initiate something positive to cut energy usage in buildings, as well as switching out of fossil fuel electricity into renewables. At meeting and meeting for Member State officials called to consider options to consider both climate change and energy security options, there has been universal backing for the need for an initiative of precisely this type.

The proposal put before us should be welcomed wholeheartedly, even whilst recognising its limitations. If all a national government does is implement its' proposals on a minimalist basis, nothing like the identified savings potential will be achieved. But if it becomes a catalyst to stimulate other incentive measures designed to suit local conditions and mores, then this could just be the start of something very big.

Politics, as RA Butler called his autobiography, is the Art of the Possible. This well-crafted directive should prove to be very good politics.

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## Common energy standards – the directive in summary

The draft directive has four main components.

- There will be a common basis for minimum energy performance standards. This will integrate energy aspects of building design, construction and services; allow designers to meet energy reduction standards in a flexible and cost-effective way; and incorporate simple energy indicators.
- The standards will apply to all new residential and tertiary (roughly the commercial and public) sector buildings and to major refurbishments of existing buildings and to major refurbishments of existing buildings larger than 1000 m<sup>2</sup>.
- An energy performance certificate, renewable every five years, will be required whenever a building (new or existing) is constructed, sold or rented out. The certificate should include advice on improving energy performance and should be on display in buildings.

Boilers with an output of more than 10kW will be inspected regularly (every 2 years for boilers of more than 100kW). Where the boiler is more than 15 years old, inspection should extend to heating systems. Similar measures are needed for cooling systems, particularly in larger buildings.